

FORMATION OF SPORANGIA IN STEMONITIS

Hilton (Jour. Q. M. C., Apr. 1916) contributes an interesting note on the method of forming sporangia in this common mycetozoon. He had the good fortune to find considerable masses of plasmodium just in condition to observe the whole process. At noon the plasmodium formed somewhat rounded, solid, cushion-shaped masses. This surface differentiated in about a quarter of an hour into frothy, bubble-like hemispheres which divided and covered the entire surface regularly. By 4:00 P. M. each mass of hemispheres had contracted in width and increased in height; and the basal part constricted into flutings corresponding to the surface hemispheres. These flutings gradually contracted to pillars, the creamy protoplasm withdrawing more and more to the upper third. In another half hour black stalks were visible as the cores of the pillars. By 8:30 o'clock all the protoplasm had risen clear of the substratum and the still cohering heads of the sporangia appeared resting on a forest of black stalks. By 10:00 P. M. the sporangia had virtually assumed their permanent shape and were beginning to darken.

A DROUTH-ENDURING ZYGNEMA

Fritsch (Ann. Bot. 1916, pp. 135-149) reports upon a Zygnema especially adapted to terrestrial conditions. The longitudinal walls become much thickened, showing two or three successive layers. The outer layer of the wall is mucilaginous. This doubtless is an adaptation which prevents too rapid drying and aids resorption of water on return of moist conditions. It was found on Hindhead Common (England.)

There are two chloroplasts in the mature cell. Division takes place by an infolding or growth from the inner layer of the cell wall. The growth of this gradually constricts the protoplast, but the division may not be completed for considerable time. In this way the two daughter protoplasts have at first a connection thru the center of this plate.

With the oncoming of drouth the fat globules of the cell pass to the outer surface, and form there a dense layer just beneath the cell wall. When the plant begins to absorb water the fat drops

come to be distributed again. When a drouth begins, the protoplast develops a new layer of the cell membrane. A cell divides not more than twice between two drouths. Agamic reproduction may take place early in the year, by the cell dividing unequally into a smaller pigment cell and a large, simple reproductive spore (akinete.) The pigment body disintegrates, the wall weakens and this becomes a breaking point for the dividing up of the filament.

BACTERIA AID IN FORMATION OF EUROTIIUM

Sartory and Roger (C. R. Soc. Biol. Paris; 79: pp. 174-5) found, in a variety of *Aspergillus B* grown on damp straw, that they could secure promptly and abundantly and constantly the formation of perithecia, provided the culture was inoculated with microorganisms of the *B. mesentericus* group. Otherwise, he found, with pure cultures of the *Aspergillus* he could not get the *Eurotium* even with the aid of the various media hitherto suggested by students as valuable in this connection.

BACTERIAL INFECTION IN FRESH EGGS

Hadley and Caldwell (Bul. 164: R. I. State Col. Ag. Exp. Sta.) have discovered 8.7% of fresh eggs show bacterial infection of the yolk. The whites were sterile in all cases examined. The fertilization of the egg made no difference in the percentage. Forty different bacterial forms were found. There were no streptococci, and none of the groups causing hæmorrhagic septicæmia, enteritis, typhoid-dysentery, or diphtheria.

The study was instituted to throw light on the mortality of embryos in incubation, and the degree to which the mortality of chicks in brooders may be influenced by egg infection from mothers harboring the germs of diseases.

SOME REMARKABLE FEEDING ACTIONS OF AMEBÆ

Mast and Root (J. Exp. Zool. July, 1916) report studies of the capture of rotifers, paramécia, and other ciliates, by *Ameba*. They capture rotifers by flowing around the foot while attached. The protoplasm gradually flows upward along the stalk. The rotifer contracts in the effort to relieve the pressure; but when it extends